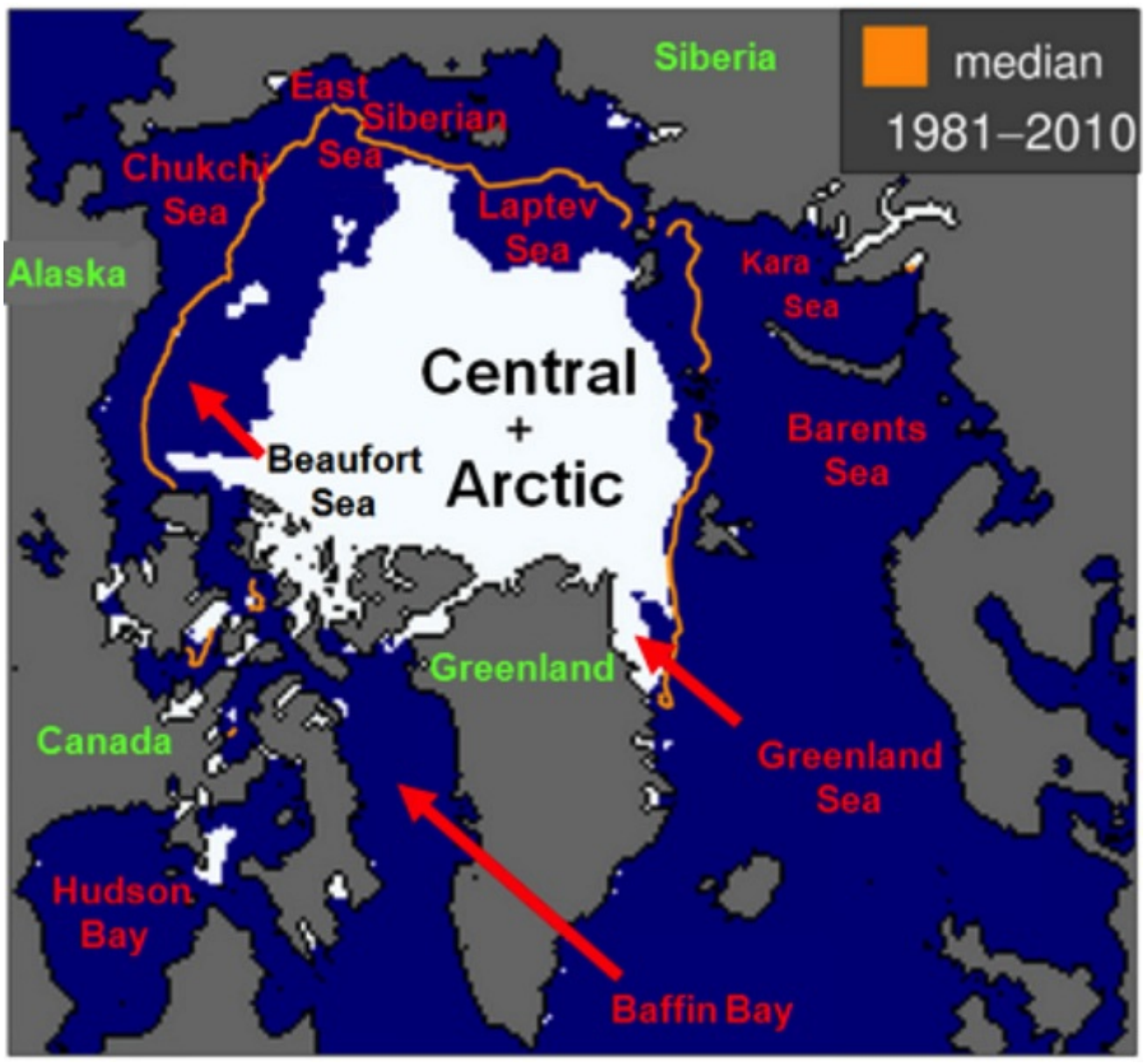
Arctic sea ice minimum for 2015

16 September 2015 - Arctic sea ice cover dropped to 4.41 million square kilometres this summer, the 4th lowest Arctic sea ice extent recorded since satellite measurements began in 1979.

Arctic sea ice cover reached its minimum extent on September 11 2015, according to preliminary figures from the National Snow and Ice Data Centre (NSIDC) in the US. It must be noted that changing winds could still push the ice extent lower.

This year's minimum is above the 2012 record low extent of 3.41 million square kilometres, but still below the long term (1981-2010) average of 6.22 million square kilometres. Overall the long term trend in ice cover remains downward.



Sea ice coverage on 11 September, with average conditions from 1981-2010 indicated in orange. (Underlying map and data courtesy of NSIDC)

Sea ice "extent" is defined as the total area of ocean that contains sea ice with concentration above 15%. Knowledge of the minimum September sea ice cover can provide information on the relative warmth of the Arctic summer each year and is an indication of the ongoing steady decline of the summer sea ice cover. This can be viewed as a visible indicator of how climate conditions are changing the Arctic.

Even small changes in the atmosphere and ocean can dramatically alter the yearly cycle of sea ice melt and growth, meaning that sea ice changes are representative of the cumulative changes taking place in both the ocean and atmosphere.

Therefore, as well as being an important component of the climate system, sea ice can be considered a "barometer" for climate change in the Polar Regions and beyond.

Particulars of the 2015 melt season

This year, the start of the melt season in May and June was relatively cool in most of the Arctic Ocean, similar to 2013 and 2014, due to a lack of the persistent southerly winds which characterised the early melt season in 2012, and probably also due to quite cyclonic conditions, which may have increased cloud cover, reducing the amount of sunlight hitting the ice.

However in July the weather changed and sea ice rapidly melted and loss during this month was the third highest on record.

In August stormy conditions helped the ice to become dispersed while in late August the ice edge retreated further and a weakening sun meant meltponds rapidly froze over. As September began, ice edge retreat stalled.

This melt season demonstrates the ongoing vulnerability of the thinning sea ice cover. The long-term decline in summer sea ice extent has been linked to warming winter temperatures, wind-driven loss of multiyear sea ice and earlier loss of snow cover in the land bordering the Arctic Ocean - all of which serve to increase the vulnerability of the sea ice to melt during the summer.

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